

CLAIMS

1. Device for measuring radiant energy comprising:

- 5 - a carrier comprising first means (10, 100, 200, 300) allowing the absorption of radiant energy, and second means (11, 110, 210, 310) enabling the provision of one or more electric signals in relation to the absorbed radiant energy,
- 10 - a substrate (12, 120, 220, 320) comprising reading means (13, 125, 225, 228, 325) to read said electric signals, the carrier being mobile relative to the substrate.

15 2. Device for detecting radiant energy according to claim 1, the reading means (13, 125, 225, 325) being fixed.

20 3. Device for detecting radiant energy according to claim 1, the reading means (228) being mobile.

25 4. Device for detecting radiant energy according to claim 3, the first means and the reading means being mobile.

30 5. Device for detecting radiant energy according to claims 1 to 4, able to take up a position in which the second means (11, 110, 210, 310) are not electrically connected to the reading means (13, 125, 225, 228, 325).

6. Device for detecting radiant energy according to claims 1 to 5, able to take up a position in which the substrate (12, 120, 220, 320) and the carrier are connected or joined solely via insulating
5 zones (14, 123, 208, 323) belonging to the carrier or/and the substrate.

7. Device for detecting radiant energy according to claims 1 to 6, able to take up a position
10 in which the carrier is neither joined to nor in contact with the substrate (12, 320).

8. Device for detecting radiant energy according to claim 7, able to take up a position in
15 which the carrier is in levitation with respect to the substrate (12, 320).

9. Device for detecting radiant energy according to claims 5 to 8, said position being a
20 position in which the device is able to take a measurement.

10. Device for detecting radiant energy according to claims 5 to 9, the position being a
25 position in which the first means (10, 100, 200, 300) are able to heat.

11. Device for detecting radiant energy according to claims 5 to 10, able to take up at least
30 one other position in which the second means (11, 110,

210, 310) are electrically connected to the reading means (13, 125, 225, 228, 325).

12. Device for detecting radiant energy
5 according to claims 5 to 11, able to take up at least one other position in which the conductor zones (115, 215, 315) of the carrier are in contact with other conductor zones (13, 125, 225, 228, 325, 326) of the substrate.

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13. Device for detecting radiant energy
according to claims 5 to 11, able to take up at least one other position in which the conductor zones (115, 215, 315) of the carrier are in contact with the
15 reading means (13, 125, 225, 228, 325) of the substrate.

14. Device for detecting radiant energy
according to claims 11 to 13, the other position being
20 a position in which the reading means (13, 125, 225, 228, 325) are able to acquire said electric signals.

15. Device for detecting radiant energy
according to any of claims 11 to 13, the other position
25 being a position in which the first means (10, 100, 200, 300) are able to cool.

16. Device for detecting radiant energy
according to any of claims 1 to 6, the substrate (120, 220) and the carrier being mechanically attached or
30 linked.

17. Device for detecting radiant energy according to claim 16, the carrier being attached to the substrate (220) via suspending means (208).

5 18. Device for detecting radiant energy according to claim 16 or 17, the suspending means (208) being flexible.

19. Device for detecting radiant energy
10 according to either of claims 17 or 18, the suspending means (208) being in a thermal insulating material.

20. Device for detecting radiant energy according to any of claims 1 to 15, the substrate (12,
15 320) and the carrier being independent.

21. Device for detecting radiant energy according to any of claims 1 to 20, also comprising: actuating means (17, 19, 107, 127, 307, 327) enabling
20 displacement of the first means (10, 100, 200, 300) with respect to the reading means (13, 125, 225, 228, 325).

22. Device for detecting radiant energy
25 according to claim 21, the actuating means (17, 19, 107, 127, 307, 327) enabling displacement of the carrier.

23. Device for detecting radiant energy
30 as in either of claims 21 or 22, the actuating means allowing displacement of the reading means.

24. Device for detecting radiant energy as in any of claims 21 to 23, the actuating means being at least partly thermomechanical, or piezoelectric or electromagnetic or electrostatic.

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25. Device for detecting radiant energy as in any of claims 21 to 24, the actuating means comprising one or more electrodes (17, 207a, 207b, 307a, 307b) belonging to the carrier or/and one or more electrodes (19, 227a, 227b, 327a, 327b) belonging to the substrate.

26. Device for detecting radiant energy as in any of claims 21 to 25, wherein the actuating means are piezoelectric, the reading means (228) being able to lengthen to enter into contact with the carrier.

27. Device for detecting radiant energy as in any of claims 1 to 26, said reading means being formed of one or more conductor pads (13, 125, 225, 228, 325).

28. Device for detecting radiant energy as in any of claims 1 to 27, the substrate (12, 120, 220, 320) comprising one or more circuits for processing said electric signals.

29. Device for detecting radiant energy as in any of claims 1 to 28, the substrate comprising

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one or more circuits enabling polarization of said second means.

30. Device for detecting radiant energy
5 as in any of claims 1 to 29, the first means (10, 100, 200, 300) being formed of at least one absorbing layer of electromagnetic radiant.

31. Device for detecting radiant
10 energy as in any of claims 1 to 30, the second means (11, 110, 210, 310) being formed of at least one semiconductive or metal layer.

32. Device for detecting radiant energy
15 as in claim 31, wherein the second means (11, 110, 210, 310) are formed of at least one semi-conductive layer, the semi-conductive layer adjoining or being integrated in the first means (10, 100, 200, 300).

20 33. Device for detecting radiant energy as in any of claims 1 to 32, the second means comprising one or more thermistors.

34. Device for detecting radiant energy
25 as in any of claims 1 to 33, the substrate (300) also comprising: a layer (399) enabling reflection of the electromagnetic rays.

35. Device for detecting radiant energy
30 as in any of claims 1 to 34, the substrate (12, 120, 220, 320) being semi-conductive.

36. Device for detecting radiant energy as in any of claims 1 to 35, the device for detecting radiant energy being made in thin layers.

5 37. MEMS comprising the device as in any of claims 1 to 36.